

REQUEST FOR ACCESS OF ABANDONED APPLICATION UNDER 37 CFR 1.14(a)

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In re Application of

Application Number

08/320,157

Filed

Oct. 7, 1994

Group Art Unit

1804

Examiner

Chambers

Paper No. 8

Assistant Commissioner for Patents
Washington, DC 20231

I hereby request access under 37 CFR 1.14(a)(3)(iv) to the application file record of the above-identified ABANDONED application, which is: (CHECK ONE)

☒ (A) referred to in United States Patent Number 5,998,131 column 62

☐ (B) referred to in an application that is open to public inspection as set forth in 37 CFR 1.11, i.e., Application No. _____, filed _____, on page _____ of paper number _____

☐ (C) an application that claims the benefit of the filing date of an application that is open to public inspection, i.e., Application No. _____, filed _____, or

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Chris Riley

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9/14/00

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US005998131A

United States Patent [19]
Barr et al.

[11] **Patent Number:** **5,998,131**
 [45] **Date of Patent:** **Dec. 7, 1999**

[54] **SCREENING METHODS FOR THE IDENTIFICATION OF COMPOUNDS CAPABLE OF ABROGATING BAK-BHRF-1 PROTEIN INTERACTIONS**

[75] **Inventors:** Philip J. Barr, Berkeley; Michael C. Klefer, Clayton, both of Calif.

[73] **Assignee:** LXR Biotechnology, Inc., Richmond, Calif.

[21] **Appl. No.:** 08/944,530

[22] **Filed:** Oct. 7, 1997

Related U.S. Application Data

[62] Continuation of application No. 08/426,529, Apr. 20, 1995, abandoned, which is a continuation-in-part of application No. 08/320,157, Oct. 7, 1994, which is a continuation-in-part of application No. 08/160,067, filed as application No. PCT/US94/13930, Nov. 30, 1994, abandoned.

[51] **Int. Cl.⁶** C12Q 1/70; A61K 39/245; A61K 39/23

[52] **U.S. Cl.** 435/5; 424/230.1; 424/233.1

[58] **Field of Search** 435/4, 5, 7.1, 69.1, 435/71.1, 172.3; 530/350; 436/501

[56] References Cited

FOREIGN PATENT DOCUMENTS

WO 93/04169 3/1993 WIPO.
 WO 94/00572 1/1994 WIPO.
 WO 95/00160 1/1995 WIPO.
 WO 95/00642 1/1995 WIPO.
 WO 95/05738 3/1995 WIPO.
 WO 95/05750 3/1995 WIPO.
 WO 95/15084 6/1995 WIPO.

OTHER PUBLICATIONS

Ameisen et al., "Cell dysfunction and depletion in AIDS: The programmed cell death hypothesis" *Immunol. Today* (1991) 12: 102-105.

Barr, "Expression of foreign genes in yeast" *Transgenesis* (1992) pp. 55-79.

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Primary Examiner—Laurie Scheiner

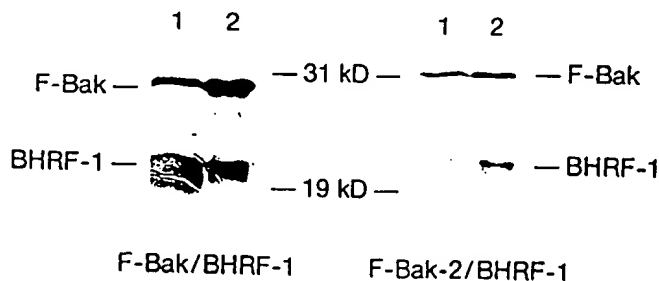
Assistant Examiner—Jeffrey S. Parkin

Attorney, Agent, or Firm—Sheridan Ross P.C.

[57] ABSTRACT

The present invention provides methods for screening potential anti-viral therapeutic agents by monitoring their ability to disrupt the interaction between the BAK protein and a viral protein.

6 Claims, 8 Drawing Sheets



1) *In vitro* co-translated proteins
 2) Proteins bound to anti-FLAG agarose

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REQUEST FOR ACCESS OF ABANDONED APPLICATION UNDER 37 CFR 1.14(a)

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In re Application of

Application Number

08/160,067

Filed

Nov. 30, 1994

Group Art Unit

1642

Examiner

Paper No. 24

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Washington, DC 20231

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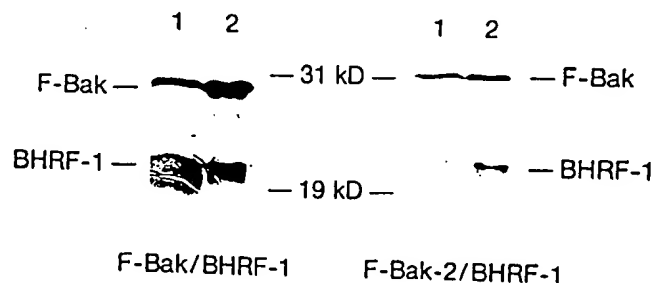
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